 National Transportation Safety Board FACTUAL REPORT AVIATION		NTSB ID: CEN11FA436		Aircraft Registration Number: N773RY	
		Occurrence Date: 06/30/2011		Most Critical Injury: Fatal	
		Occurrence Type: Accident		Investigated By: NTSB	
Location/Time					
Nearest City/Place Ottumwa	State IA	Zip Code 52501	Local Time 1733	Time Zone CDT	
Airport Proximity: On Airport/Airstrip		Distance From Landing Facility: 0			
Aircraft Information Summary					
Aircraft Manufacturer Ray Aerial Spraying		Model/Series 773 Racer		Type of Aircraft Airplane	
Revenue Sightseeing Flight: No			Air Medical Transport Flight: No		
Narrative					
<p>Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:</p> <p>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p> <p>HISTORY OF FLIGHT</p> <p>On June 30, 2011, about 1733 central daylight time, an amateur-built Ray Aerial Spraying model 773 Racer, N773RY, impacted terrain and a tree while returning and attempting to land at the Ottumwa Regional Airport(OTM), Ottumwa, Iowa. The pilot was fatally injured. The airplane was registered to Ray Aerial Spraying and was being operated by a commercial pilot under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual flight rules (VFR) conditions prevailed for the flight which was not operating on a flight plan. The flight originated about 1730 from OTM and was en route to the pilot's private airstrip in Hedrick, Iowa.</p> <p>A witness reported that the pilot flew the airplane to OTM on June 28, 2011. Upon leaving, the pilot was unable to start the airplane and told the witness that he would return later to get the airplane. A receipt indicated that the airplane was fueled with 30.1 gallons of 100LL aviation gasoline on June 28, 2011. Another receipt for parts required to repair the engine starter was dated June 30, 2011.</p> <p>A witness to the accident reported that he had talked with the pilot for about an hour prior to the accident flight. They reportedly discussed the accident airplane's glide characteristics in the event of an engine failure. The pilot said if the engine were to quit that he would have to put the airplane into a dive and get it on the ground. The witness said that after their conversation the pilot took off in the accident airplane and performed two low passes down the runway and then departed the area.</p> <p>The same witness reported that later, he was in flight on downwind for runway 22 when he saw the accident airplane approaching from the distance. The accident airplane was above traffic pattern altitude and overflowed runway 22. The airplane proceeded past the departure end of runway 22 and turned left onto what the witness believed was a crosswind for runway 22. When the airplane was on the crosswind leg the witness saw the nose of the airplane pitch down and descended and maneuvered toward the airport. The airplane subsequently struck a farm field and then a tree. A postimpact fire ensued. The witness could not hear the accident airplane's engine due to the engine noise from the ultralight he was flying.</p> <p>PERSONNEL INFORMATION</p> <p>The pilot held a commercial pilot certificate with airplane single-engine land, single-engine sea, multiengine land, and instrument airplane ratings. He held a second class airman medical certificate issued on July 7, 2010. The pilot also held a mechanic certificate with airframe and powerplant ratings. A review of pilot logbook records indicated that he had accumulated 6,581.8</p>					
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Narrative (Continued)

hours of total flight time including 6,381.8 hours in single engine airplanes. A logbook entry indicated that the pilot's most recent flight review was conducted on July 7, 2010. Two entries were found within the logbook for flights in the accident airplane. The first entry, dated May 17, 2011, indicated that the first flight of the accident airplane was conducted on that date. The total time recorded in the pilot's logbook for the 2 flights in the accident airplane was 0.7 hours.

AIRCRAFT INFORMATION

The airplane was a single-seat amateur-built monoplane reminiscent of a 1930's air racer. The fuselage and tail surfaces of the airplane were constructed primarily of steel tubing with a fabric covering. The wings were constructed of wood with fabric covered steel tubing used for the aileron structures. The airplane had a fixed conventional (tail-wheel) landing gear arrangement. The airplane had a wing span of 21.5 feet and 98.57 square feet of wing area.

A Ranger model V-770-11 engine powered the airplane. The cylinder configuration was a "V" arrangement with 12 cylinders mounted on the crankcase in two banks of six cylinders. The engine was rated to produce 520 horsepower.

METEOROLOGICAL INFORMATION

At 1753, the recorded weather conditions at OTM were: Wind 190 at 15 knots; 10 miles visibility; clear skies; temperature 33 degrees C; dew point 25 degrees C; altimeter setting 29.82 inches of mercury.

AIRPORT INFORMATION

The OTM airport was located about 5 miles northwest of the city of Ottumwa, Iowa at an elevation of 845 feet above sea level. There was no operating control tower on the airport when the accident occurred. The airport had 2 intersecting runways. Runway 13/31 was 5,885 feet by 150 feet, and runway 4/22 was 4,600 feet by 100 feet. Both runways were hard surface paved runways.

WRECKAGE AND IMPACT INFORMATION


The airplane impacted a berm that bordered a farm field adjacent to the airport. The initial impact point was located about 650 feet southwest of the approach end of runway 31. The airplane's heading at the time of impact was about 15 degrees. A portion of the left wing was found near the initial impact point. The direction of travel and location of impact were consistent with an attempted return to the runway. After the initial impact the airplane travelled about 250 feet before coming to rest.

The fuselage aft of the pilot compartment and tail surfaces of the airplane remained intact except for fire damage to the fabric covering. The forward fuselage was separated from the aft section and displaced to the right. The forward fuselage coverings were consumed by fire. Both wings were almost completely consumed by fire with the exception of the ailerons and the main spar. The wooden main wing spar was charred but predominately intact. The spar remained attached to the fuselage.

Examination of the airplane's flight control system revealed no evidence of a preimpact failure or malfunction.

The airplane's engine was examined. Rotation, crankshaft continuity, accessory continuity, and valve train continuity were confirmed. The distributor caps were opened and no preimpact anomalies noted. The engine's magnetos produced spark on the output leads to the distributors when the engine was rotated by hand. The examination of the engine and ignition system revealed no evidence of a preimpact failure or malfunction.

The fuel system of the airplane was consumed by the postimpact fire. The carburetor exhibited extensive fire damage. No determination could be made concerning preimpact operation of the carburetor.

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The fire was limited to the area immediately surrounding the main wreckage. No soot streaking on the aft fuselage or other evidence that the fire erupted in-flight was found.


MEDICAL AND PATHOLOGICAL INFORMATION


The pilot initially survived the accident but later succumbed to injuries sustained in the accident about 5 hours later. An autopsy was performed at the University of Iowa Hospitals and Clinics on July 1, 2011. The cause of death was attributed to injuries received during the accident.

A Final Forensic Toxicology Fatal Accident Report found Lidocaine detected in the heart. Lidocaine is used as a local anesthetic and for the treatment of ventricular arrhythmias.

Updated on Oct 12 2012 6:11PM

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		Occurrence Date: 06/30/2011				
		Occurrence Type: Accident				
Landing Facility/Approach Information						
Airport Name Ottumwa Regional Airport		Airport ID: OTM	Airport Elevation 845 Ft. MSL	Runway Used 31	Runway Length 5885	Runway Width 150
Runway Surface Type: Asphalt; Concrete						
Runway Surface Condition: Dry						
Approach/Arrival Flown: NONE						
VFR Approach/Landing: Forced Landing						
Aircraft Information						
Aircraft Manufacturer Ray Aerial Spraying		Model/Series 773 Racer		Serial Number 001		
Airworthiness Certificate(s): Experimental (Special)						
Landing Gear Type: Tailwheel						
Amateur Built Acft? Yes		Number of Seats: 1		Certified Max Gross Wt. LBS	Number of Engines: 1	
Engine Type: Reciprocating		Engine Manufacturer: Fairchild Ranger		Model/Series: V-770	Rated Power: 520 HP	
- Aircraft Inspection Information						
Type of Last Inspection Conditional		Date of Last Inspection	Time Since Last Inspection Hours		Airframe Total Time 2 Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?/Type No		ELT Operated? No		ELT Aided in Locating Accident Site? No		
Owner/Operator Information						
Registered Aircraft Owner Ray Aerial Spraying		Street Address 15124 60th Ave				
		City Hedrick		State IA	Zip Code 52563	
Operator of Aircraft Rex A. Yoakam		Street Address 15124 60th Ave				
		City Hedrick		State IA	Zip Code 52563	
Operator Does Business As:				Operator Designator Code:		
- Type of U.S. Certificate(s) Held: None						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: Part 91: General Aviation						
Type of Flight Operation Conducted: Personal						
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On File		On File		On File	On File	60																																																																																																		
Sex: M	Seat Occupied: Single	Occupational Pilot? No			Certificate Number: On File																																																																																																			
Certificate(s): Commercial																																																																																																								
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Instructor Rating(s): None																																																																																																								
Current Biennial Flight Review? 07/2010																																																																																																								
Medical Cert.: Class 2		Medical Cert. Status: With Waivers/Limitations			Date of Last Medical Exam: 07/2010																																																																																																			
<table border="1"> <thead> <tr> <th>- Flight Time Matrix</th> <th>All A/C</th> <th>This Make and Model</th> <th>Airplane Single Engine</th> <th>Airplane Multi-Engine</th> <th>Night</th> <th colspan="2">Instrument</th> <th>Rotorcraft</th> <th>Glider</th> <th>Lighter Than Air</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>Actual</th> <th>Simulated</th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>Total Time</td> <td>6592</td> <td>1</td> <td>6382</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Pilot In Command(PIC)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instructor</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Instruction Received</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 90 Days</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 30 Days</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Last 24 Hours</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>						- Flight Time Matrix	All A/C	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air							Actual	Simulated				Total Time	6592	1	6382								Pilot In Command(PIC)											Instructor											Instruction Received											Last 90 Days											Last 30 Days											Last 24 Hours										
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 National Transportation Safety Board FACTUAL REPORT AVIATION			NTSB ID: CEN11FA436		
			Occurrence Date: 06/30/2011		
			Occurrence Type: Accident		

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
OTM	1753	CDT	845 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: Clear				Ft. AGL	Condition of Light: Day
Lowest Ceiling: None			Ft. AGL	Visibility: 10 SM	Altimeter: 29.82 "Hg
Temperature: 33 °C	Dew Point: 25 °C	Weather Conditions at Accident Site: Visual Conditions			
Wind Direction: 190	Wind Speed: 15	Wind Gusts: 20			
Visibility (RVR): Ft.	Visibility (RVV) SM				
Precip and/or Obscuration:					

Accident Information					
Aircraft Damage: Destroyed		Aircraft Fire: Ground		Aircraft Explosion: Ground	

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL	
First Pilot	1				1	
Second Pilot						
Student Pilot						
Flight Instructor						
Check Pilot						
Flight Engineer						
Cabin Attendants						
Other Crew						
Passengers						
- TOTAL ABOARD -	1				1	
Other Ground						
- GRAND TOTAL -	1				1	

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NTSB ID: CEN11FA436

Occurrence Date: 06/30/2011

Occurrence Type: Accident

Administrative Information

Investigator-In-Charge (IIC)

John M. Brannen

Additional Persons Participating in This Accident/Incident Investigation:

Dan Michaelson
FAA- Des Moines FSDO
Des Moines, IA